Arguments/Remarks

Upon entry of this amendment, claims 1-7 and 13 will be pending in this application. Claims 8, 9, and 12 are canceled without prejudice. Applicants reserve the right to pursue the canceled subject matter in a divisional application. Claim 10 was canceled in a previous amendment. Claim 11 is canceled and is re-written as claim 13 to correct structures with overlapping atoms. Claims 1-7 are amended to include pharmaceutically acceptable salts. The claims are also amended as described below. No new matter is added by these amendments.

Applicants' response to the Examiner's Office Action is as follows.

Specification

The Examiner has objected to the title of the invention. Applicants have amended the title to "Substituted Pyrrolo[2,3-2]pyrimidines as Protein Kinase Inhibitors" as suggested by the Examiner.

Claim Objections

The Examiner has objected to claims 8, 9, and 12 as being drawn to nonelected subject matter. Applicants have canceled claims 8, 9, and 12, thus rendering the objection moot.

The Examiner has objected to claim 11 because some of the structures have overlapping atoms. Applicants have corrected the structures as shown in new claim 13. No new matter is added.

Applicants respectfully request that the objections to the claims be reconsidered and withdrawn.

Claim Rejections 35 U.S.C. §112, second paragraph

The Examiner has rejected claims 1-7 and 11 under 35 U.S.C. §112, second paragraph, as being indefinite, allegedly for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants respectfully traverse, in-part, this rejection.

According to the Examiner the term "radicals" found throughout claims 1-3 is vague. The Examiner suggested the term be changed to the term "group". Applicants have amended the claims as suggested by the Examiner.

According to the Examiner the term "formamyl" is vague. Solely in order to expedite prosecution of this application, Applicants have removed the term 'formamyl" from the claims.

According to the Examiner, the term "ethyl-(2-hydroxy-ethyl)-amino 2-(4-methyl-piperazin-1-yl)-ethoxy" in claim 3 lacks antecedent basis. Applicants have amended claim 3 by removing the term "ethyl-(2-hydroxy-ethyl)-amino".

According to the Examiner the term "heteroarylalkyl" in claim 3, line 3 lacks antecedent basis. Applicants respectfully disagree. The term heteroarylalkyl does not lack antecedent basis because the term heteroarylalkyl refers back to 1H-indazol-7-yl and 1H-indolyl. This is appropriate because heteroarylalkyl, in claim 1, refers back to C_{5-10}heteroaryl-C_{0-4}alkyl, which includes heteroaryl groups, like 1H-indazol-7-yl and 1H-indolyl, that are directly linked to W as well as heteroaryl groups linked to W through an alkyl group. However, Applicants have amended claim 3 by removing the phrase "arylalkyl and heteroarylalkyl".

According to the Examiner the term "carboxy" in claim 4 is vague. Applicants respectfully disagree. Applicants assert the term "carboxy" is not vague and is known as a –COOH group.

According to the Examiner, 6 compounds (listed on pages 4-6 of the Office Action) in claim 11 lack antecedent basis. Applicants have amended claim 11 so that it is now in independent form.

According to the Examiner, the term "formamidyl" in claim 4 lacks antecedent basis because term is an N=C-N group and this group is not found in claim 1 as a substituent on R_2. Applicants respectfully disagree. Applicants assert that the term "formamidyl" is known as a $-C(O)NH_2$ group and not as an N=C-N group. The group $-C(O)NH_2$ can be found in claim 1 as the $-XC(O)NR_5R_5$ substituent on R_2.

According to the Examiner, the alkoxy groups on formula Ig in claim 6 lack antecedent basis due to the alkoxy groups on the phenyl ring of R_1. Applicants respectfully disagree. Claim 1 recites that an R_1 C_{6-10}aryl-C_{0-4}alkyl group (e.g. phenyl) "...is optionally substituted by 1 to 3 groups independently selected from ... C_{1-6}alkoxy..." The term "C_{1-6}alkoxy" can be found in line 10 of claim 1.

In light of the above amendments and remarks, Applicants respectfully request that the rejection of claims 1-7 and 11 under 35 U.S.C. §112, second paragraph, be reconsidered and withdrawn.

Claim Rejections 35 U.S.C. §112, first paragraph

The Examiner has rejected claims 1-7 and 11 under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement. According to the Examiner, the specification does not provide specific description for "isomers", and just a mere recitation of "isomers" is not sufficient to comply with the written description requirement. Applicants respectfully highlight that the specification teaches that the compounds of the invention can be prepared as their individual stereoisomers and also describes how these stereoisomers can be obtained. See page 18, paragraph 66 of the specification. However, solely in order to expedite prosecution of this application, Applicants have amended claim 1 to remove the term "isomers"

from the claim. Nevertheless, Applicants assert that the claims embrace various stereosiomeric forms of the compounds of formula (I).

The Examiner has rejected claims 1-7 and 11 under 35 U.S.C. §112, first paragraph because the specification, while being enabling for making pharmaceutically acceptable salts of the compounds of claim 1, allegedly it does not reasonably provide enablement for a polymorph or solvate of a compound of claim 1. Solely in order to expedite prosecution of this application, and without in any way conceding to the propriety of the rejection, Applicants have removed the terms "hydrates", "solvates" and "polymorphs" from the claims.

The Examiner has rejected claims 1-7 and 11 under 35 U.S.C. §112, first paragraph because the specification, while being enabling for making salts of the claimed compounds, allegedly does not reasonably provide enablement for making prodrugs of the claimed compounds. Solely in order to expedite prosecution of this application, and without in any way conceding to the propriety of the rejection, Applicants have removed the term "prodrugs" from the claims.

In light of the above amendments and remarks, Applicants respectfully request that the rejection of claims 1-7 and 11 under 35 U.S.C. §112, first paragraph be reconsidered and withdrawn.

Claim Rejections - 35 U.S.C. §102

The Examiner has rejected claims 1-5 under 35 U.S.C. §102(b) as being anticipated by Chkhikvadze et al. (SU 194829). Applicants have removed formula Ib from the scope of the claims, thus rendering the rejection moot. Applicants respectfully request that the rejection be reconsidered and withdrawn.

Claim Rejections – 35 U.S.C. §103

The Examiner has rejected claims 1-5 and 7 under 35 U.S.C. 103(a) as being unpatentable over O' Yang et al. (US 20040224964). The instant application claimed compounds of formula Ib, wherein R_1 = 2,4,6-trimethylphenyl, W = NH, R_2 = cycloalkyl, R_3 = hydrogen and n = 0. According to the Examiner, the only difference between the instant formula Ib compounds and the reference is that the reference has a methyl group in the 4-position of the pyrrolo[2,3-d]pyrimidine whereas Applicants have a hydrogen in the same position. Solely in order to expedite prosecution of this application, and without in any way conceding to the propriety of the rejection, Applicants have removed formula Ib from the claims.

In light of this amendment to the claims, Applicants respectfully request that the rejection be reconsidered and withdrawn.

Conclusion

This reply is intended to further this case to allowance by addressing each ground of objection and rejection raised in the Office Action. Reconsideration of this application is respectfully requested. Should the Examiner have any questions regarding this application, the Examiner is invited to call the undersigned attorney at the number given below.

Respectfully submitted,

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